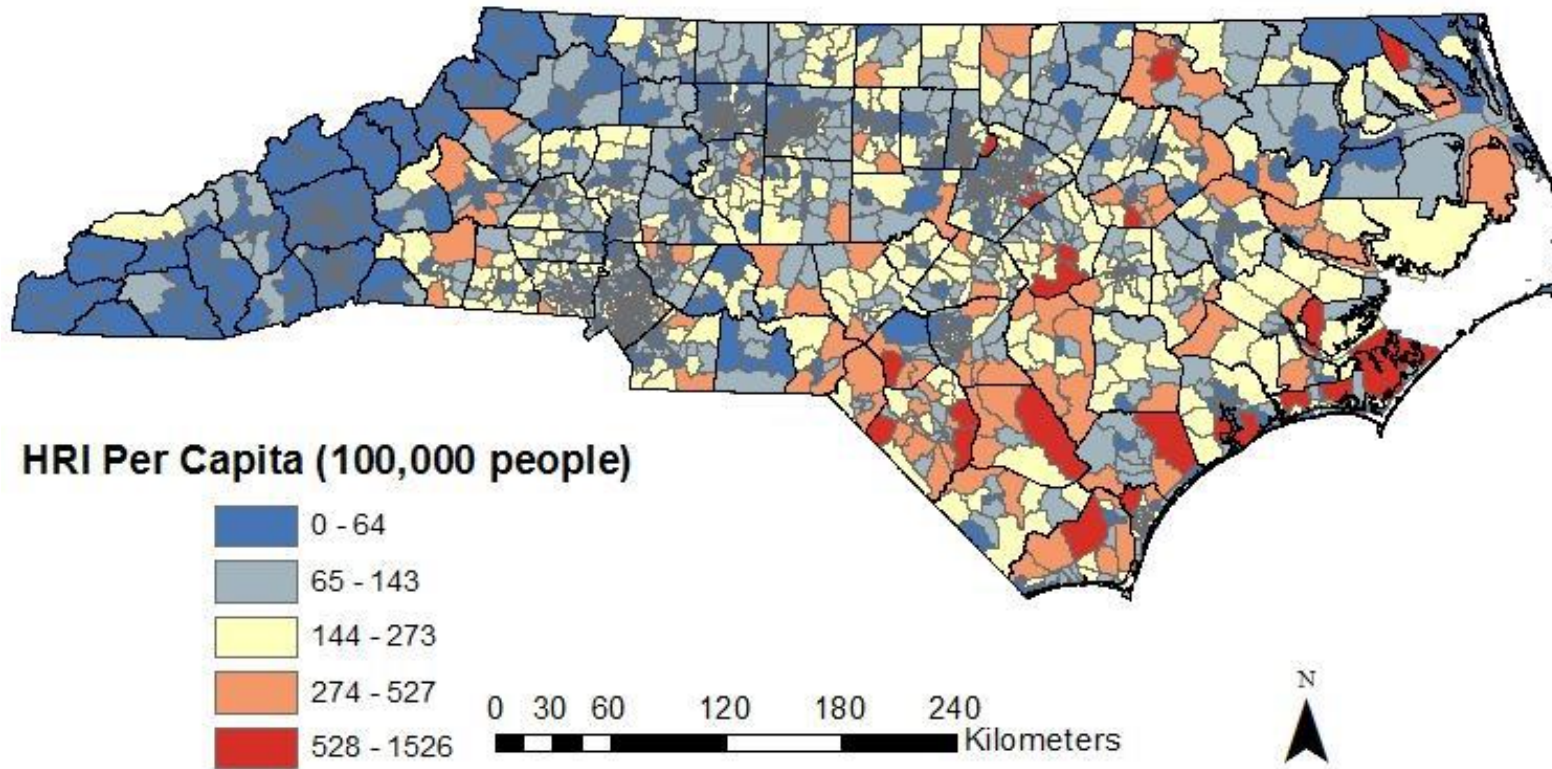




Heat Illness

NC accounted for 57% of all US heat-related deaths among crop workers from 1992-2006

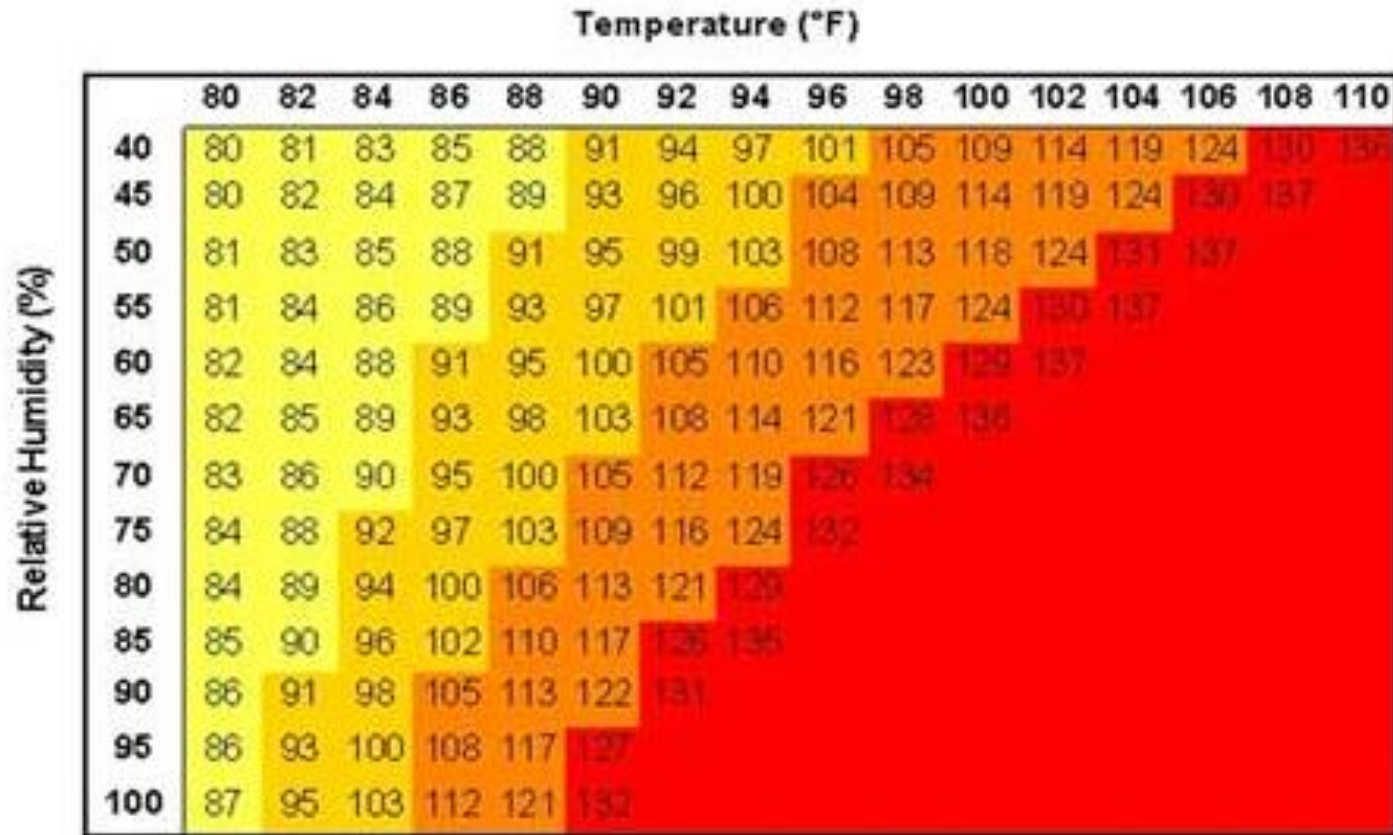


Heat-related illness from ER data:

Heat Fatality Case



Photo Wall Street
Journal, March 24, 2009



Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

■ Caution
 ■ Extreme Caution
 ■ Danger
 ■ Extreme Danger

Figure 1: Heat Index Chart. The heat index combines the effects of heat and humidity to determine how hot it feels. Direct sunshine increases the heat index by 15° F. Reprinted from the U.S. National Weather Service.¹⁸

Weather at Goldsboro-Wayne Municipal Airport on August 1, 2006

Time	Temperature (° F)	Relative Humidity (%)	Heat Index (° F)
6:40 a.m.	79	88	83
7:40 a.m.	90	75	109
8:40 a.m.	90	61	100
9:40 a.m.	95	56	110
10:40 a.m.	97	46	107
11:40 a.m.	99	42	109
12:40 p.m.	99	39	106
1:40 p.m.	99	37	105
2:40 p.m.	100	38	108
3:40 p.m.	99	37	105
4:40 p.m.	97	45	106

Weather Conditions





The Victim's Housing


Heat-Related Illness

Affected by

- Acclimatization - takes 2 weeks
- Clothing color and type - light clothing best, PPE can increase risk
- Heat index = humidity + temperature
- Fluid intake
- Alcohol intake
- Ability to rest and taking breaks

Remember

- Your ability to think clearly decreases during heat stress



Heat Illness	Signs and Symptoms	Treatment
Heat rash (prickly heat)	Small, red blisters on the skin; most likely to occur on neck/upper chest, groin, under the breasts, and in elbow creases.	Provide a cooler, less humid environment. Remove wet clothing and wash affected area. Keep affected area dry.
Heat cramps	Painful spasms of muscles in legs, arm, and abdomen; often occurs in association with strenuous activity	Stop all activity and rest in a cool place. Drink water or sports beverage. Do NOT take salt tablets. Seek medical attention if cramps continue for more than 1 hour.
Early heat illness	Mild dizziness, fatigue, or irritability; decreased concentration; impaired judgment.	Loosen or remove clothing. Rest in shade 30 minutes or more. Sip cool water.
Heat exhaustion	Heavy sweating, paleness, fatigue, weakness, dizziness, headache, nausea/vomiting, fainting, excessive thirst, dry mouth, dark yellow urine. May lead to heat stroke.	Move to cooler, shaded area as soon as possible. Loosen or remove clothing. Splash cool water on body. Rest lying down. If conscious, give sips of water. Have victim evaluated by health professional.
Heat stroke	Can occur suddenly and without warning. Red, hot, and dry skin (no sweating—though this may not be easy to determine if clothes are sweat-soaked), rapid and strong pulse, throbbing headache, dizziness, nausea, confusion, incoherent speech, aggressive behavior, convulsions, unconsciousness.	Medical Emergency—Provide immediate medical assistance. Move to a shaded area. Cool victim rapidly using whatever means available—wrap victim in sheet then pour water over sheet and fan vigorously or immerse victim in tub of cool water or spray victim with hose. If conscious, drink sips of water. Transport to nearest medical facility.

Table 2. Heat illnesses, their signs and symptoms, and associated first aid measures. (Adapted from CDC's Extreme Heat: A Prevention Guide to Promote Your Personal Health and Safety.¹⁴)

Heat Illness continuum

Core Body Temperature <104

Heat Exhaustion



Dizziness



Headache



Sweaty Skin



Weakness



Cramps



Nausea,
vomiting



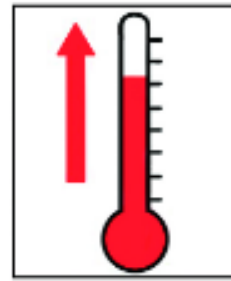
Fast heart
beat

Core Body Temperature >104

Heat Stroke



Red, hot, dry skin



High temperature



Confusion



Convulsions



Fainting

Heat Exhaustion First Aid

Action

Hydrate orally with cool water

Move to shade

Wipe skin down with wet cloths

Rest

If symptoms do not resolve within 30 minutes, consider heat stroke or other causes

Heat Stroke First Aid

Action

Call 911

Start cooling measures in the field

move farmworker to shade

remove clothing

place bags of ice under arms and
around neck

wipe skin down with wet cloths

fan vigorously

Many growers and workers do not know the
correct response and farmworkers die!

Heat Illness Prevention

Heat Index	Rest Periods	Water Intake
95 - 97	15-20 min rest/hr	2 cups/hr
98-102	25-35 min rest/hr	2 cups/hr
103 - 106	40-45 min rest/hr	4 cups/hr
>106	Extreme caution if work is done	6 cups/hr



OSHA-NIOSH Heat Safety Tool 12+

Centers For Disease Control and Prevention

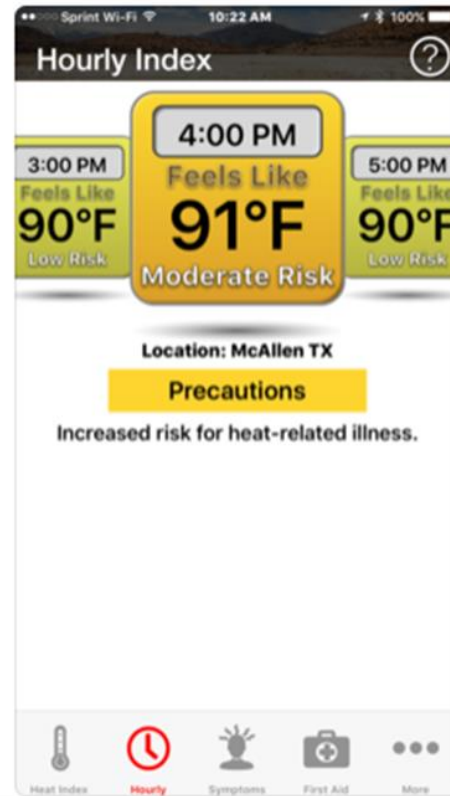
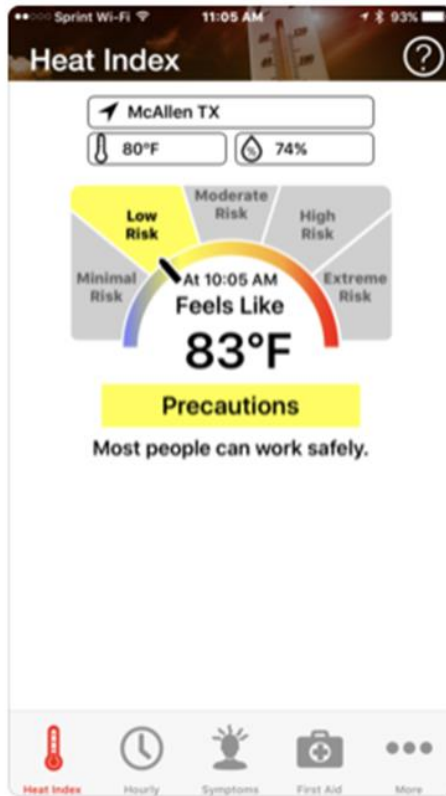
#18 in Weather

★★★★☆ 8 Ratings

Free

OSHA-NIOSH Heat Safety Tool
(downloads in Spanish if phone is set to Spanish)

iPhone Screenshots



First Aid

Heat Stroke

[Review the signs and symptoms of heat stroke](#)

- THIS IS A MEDICAL EMERGENCY: Call 911.
- Stay with the worker until help arrives.
- Move the worker to a shady, cool area.
- Remove outer clothing.
- Cool quickly with a cold water or ice bath if possible; wet the skin, place cold wet towels on skin, or soak clothing in cool water.
- Fan air around the worker.
- Place cold wet towels or ice on the worker's head, neck, armpits, and groin.

Heat Exhaustion

[Review the signs and symptoms of heat exhaustion](#)

- Take the worker to a clinic or emergency room for medical evaluation and treatment.
- If medical care is unavailable, call 911.
- Stay with the worker until help arrives.

Your location is used to determine current temperature and humidity. Tap here to enter a new location.

McAllen TX

98° 44%

Tap the temperature and humidity boxes to change their values and calculate the resulting heat index.

Skip Tutorial

OSHA-NIOSH Heat Safety Tool



Green Tobacco Sickness

- ▶ Involuntary absorption of nicotine through skin while working in tobacco
- ▶ Increased risk in early morning or after rain



Symptoms

- ▶ Nausea, vomiting, diarrhea, decreased appetite
- ▶ Weakness
- ▶ Shakiness, chills
- ▶ Insomnia
- ▶ Dizziness
- ▶ Headache
- ▶ Abdominal cramps
- ▶ Increased perspiration and salivation

Prevention

- ▶ Waterproof clothing
- ▶ Long sleeves, pants
- ▶ Bring change of clothes to fields



Differentiating Heat, Pesticide and Green Tobacco Sickness

Early Heat Illness	Dizziness, weakness, N/V, sweating, altered mental status, headache
Organophosphate/Carbamate Pesticide Poisoning	Dizziness, weakness, N/V, sweating, altered mental status, headache, diarrhea, salivation, lacrimation, rhinorrhea, urinary frequency, bradycardia, pinpoint pupils
Green Tobacco Sickness	Dizziness, weakness, N/V, sweating, headache, anorexia, insomnia